months, and one Drug Delirium case, age 27, after a hospital residence of four months.

There died one Moron, age 40, whose hospital residence was 14.6 months. He was murdered in his bedroom in San Francisco after an absence of 8.5 months. There also died one Paranoid State, age 58, who was quiet and comfortable and was accidentally killed by a train ten days after eloping.

TABLE III.

ELOPED PATIENTS NOT ACCOUNTED FOR.

	Males	Age Years	Duration Months	Hospital Residence Months	Absent Month
Manic Depressive	1	25	10.3	10.1	13.1
Dementia Praecox	19	35.6	71.8	36.8	12.25
Delirium Tremens	1	41.		2.33	12.66
Alcoholic Hallucinosis	2	50.5	6.25	20.1	7.3
Prison Psychosis	1	36	39.9	36.9	5.
Epilepsy	1	23.		2.5	20.
Moron	3	21.6		10.6	8.6
Total	28				
Average		34.5	60.58	29.3	11.5

All of these patients but one Dementia Praecox were comfortable enough to be working.

It is probable that the four diagnosed as Manic Depressive, Delirium Tremens and Alcoholic Hallucinosis, made complete recoveries.

Among the others a past history of roving was very prevalent and it is probable that some of these have been admitted to hospitals in other communities. It is also very probable that more than half have secured employment during the present labor shortage, which makes them self-supporting.

Owing to the variety of psychoses, as well as of conditions of patients when leaving and also of methods of absenting from the hospital, it quickly becomes evident that the economical aspects of the results of treatment of the insane in a State hospital cannot be considered without taking into account the medical side.

The average hospital residence of a patient discharged recovered was 6.905 months, which, based upon the present per capita rate, costs $113.10.

The foregoing tables show that the parole periods in the various psychoses are as variable as the periods of hospital residence.

The cost of treatment during 15.4 months for the 22 who were absent on parole during the 5.56 months before their return became necessary, was $252.09 per patient.

The financial saving to the State by the parole of the 75 patients leaving the hospital by this method is shown below. This, of course, cannot include any figures showing the additional saving by the large proportion of these who took up useful occupations immediately upon leaving the hospital.

Twenty-one patients were on parole 5.8 months before discharge and would have cost for hospital care during that period	$1995.08
Twenty-two patients were on parole 5.56 months before their return and would have cost	2003.60
Thirty-two have been on parole 8.64 months, saving	4528.74
Total saving by present parole system	$8527.42

Of the 32 still on parole, it is reasonable to expect that 18 will be eventually discharged recovered.

The patients now discharged from parole spend but 60% of the period of commitment actually in the hospital and it is not unreasonable to assume that those discharged when leaving could spend the last 40% of their commitments under outside supervision, which method would have saved the hospital $2253.55 during the past biennial period.

The actual saving to the hospital, combined with earlier return to former occupations, makes the economic value of the parole system very apparent and suggests the advisability for financial reasons, if for no others, of extending the parole system to provide for the large number of patients who have no one willing or able to assume such responsibility.

It is impossible without reviewing a much larger group of cases, even to attempt an estimate of the number now in the hospital who could live outside, for a time at least, under suitable supervision, but the fact that so many of these who took the matter into their own hands and eloped were able to be self-supporting, is strongly suggestive that they, and undoubtedly many more, could do well enough under supervision to effect a large saving.

The discharged patient is provided with clothes and a small sum of money by the hospital. The paroled patient is provided with nothing and is dependent on his friends, and therefore the friendless patient, no matter how worthy, cannot be paroled.

This is manifestly unjust discrimination and it is to be hoped that some adjustment between the two classes can be made whereby provision shall be made by the State, or some benevolent organization, to meet the parole requirements of this friendless group.

THE USE OF CAMPHOR AS A STIMULANT AND AS A PNEUMOCOCCICIDE IN PNEUMONIA.*

By F. F. GUNDRUM, M. D., Sacramento, Cal.

The hypodermatic use of camphor dissolved in oil as a stimulant is too widespread to require introduction. All drug stores carry a supply of this drug in ampoules sterilized and ready for immediate exhibition. The injection of camphor in larger doses with expectation of producing a pneumococcicidal effect has not been so universally adopted but has been urged by Seibert [1] and Cruikshank [2] who report excellent results from this procedure. They recommend the hypodermatic injection of 10 cc. of a 30% solution of camphor in oil of sesame at twelve-hour intervals until the temperature shall have reached normal. Other authors, however, notably Head and Brooks [3] are far from enthusiastic over the value of camphor as a stimulant, in fact these latter consider it quite inert. With the hope of decreasing our always robust mortality from pneumonia at the Sacramento County Hospital and also of de-

* Read before State Society, Santa Barbara, April 16, 1919.

*Discussed by Drs. D'Arcy Power, Brem, Fulton, Pottenger, Evans, Gundrum.

termining at any rate to our own satisfaction, the clinical value of camphor, I promulgated a new standard treatment for lobar cases. This standard treatment provided, among other things, for the hypodermatic injection of camphor. Our first dosage was as little as five grains but finding no untoward symptoms we increased the amount until each patient was getting fifteen cc. of a 20% solution of camphor in olive oil twice daily. The least troublesome site proved to be the abdominal wall. On account of the frequent changes of ward personnel, both of head nurse and interne not all lobar cases got camphor, whereas, also a few who were not lobar cases received a few doses. However, I have taken the entire hundred cases as a basis for this report. For those not treated are suitable for controls, and the broncho-pneumonias and untreated pneumonias offer an instructive contrast.

The effects on circulation were determined by taking a record of the pulse, of the systolic, and of the diastolic blood pressures just before the injection, again after an interval of fifteen minutes, one hour and two hours. Any specific effects were looked for in changes observable in the mortality, the duration, and complications found in those patients treated with camphor.

In the course of about eighteen months I was able to collect data satisfactory for study from one hundred pneumonias, which group was very readily divided into three classes:

1. Lobar pneumonias..... 66
2. Broncho-pneumonias 22
3. Untreated pneumonias 12

RESULTS IN THE LOBAR GROUP—EFFECTS UPON CIRCULATION.

The pulse changes may perhaps best be illustrated by a schema as follows:

Percentages that were

	1. Unchanged	2. Raised	3. Lowered
After 15 minutes.....	25%	44%	31%
After one hour.....	6%	32%	62%
After two hours.....	18%	37%	45%

The maximum increase, the maximum decrease, the average increase and decrease together with the average total effect recorded from all observations follow. Plus indicates a rise in pulse rate and minus a fall.

	After 15 minutes	After 1 hour	After 2 hours
Maximum Rise	25	7	6
Maximum Fall	10	16	14
Average Rise	6	4	5
Average Fall	6	6	7
Average Total Effect..	Plus 1	Minus 2	Minus 2

Effect on systolic blood pressure may also most easily be expressed by a table.

Percentages	Unchanged	Raised	Lowered
After 15 minutes..	39%	15%	46%
After 1 hour.....	28%	18%	54%
After 2 hours....	76%	0%	24%

The maximum rise and fall and total average effect similarly.

	After 15 minutes	After 1 hour	After 2 hours
Maximum Rise	3 mm	8 mm	0
Maximum Fall	20 mm	8 mm	6 mm

Total average effect minus 3 mm minus 1 mm minus 1 mm.

Effect on diastolic blood pressure similarly.

Percentages	Unchanged	Raised	Lowered
After 15 minutes..	25%	25%	50%
After 1 hour.....	64%	0%	36%
After 2 hours....	43%	0%	57%

Also:

	After 15 minutes	After 1 hour	After 2 hours
Maximum Rise	4 mm	0	0
Maximum Fall	14 mm	10 mm	9 mm

Average total effect minus 2 mm minus 2 mm minus 3 mm.

The average totals for pulse and blood pressure changes are inconsequential and might easily arise in the course of the disease uninfluenced by drugs.

Specific effects would be expected to manifest themselves by appropriate changes in the mortality, duration, or complications of the disease.

Mortality: Forty five patients received camphor. The number of injections varied from one to fourteen and the amount of camphor correspondingly from 15 to 630 grains. The average number of injections was 5 and amount of camphor 210 grains. The mortality was 29%. This figure approximates the normal rate for this hospital, many of whose pneumonia admissions are handicapped by exertion, neglect and especially by a large alcohol intake. A study done in 1912 (4) showed a mortality of 30%. This rate has remained about stationary for at least the past eight years.

Duration: Average 6.2 days. not remarkable and slightly longer than the total average of 5.7 days for all cases.

Complications and sequelae.

Delayed Resolution	4.4%
Empyema	2.2%
Lung Abscess	2.2%
Psychosis (non-alcoholic).....	2.2%

Not an unusual array. Our experience with the camphor group shows no very great or noticeable difference from the usual. The affections accompanying the lobar pneumonia here were again approximately an average. They were

Alcoholic delirium	7 cases	4 died
Chronic nephritis	2 cases	2 died
Pulmonary Tuberculosis ...	1 case	1 died

Upon compiling the results of the cases who were treated without camphor we got the rather striking percentage; Mortality 4.9% (20 recovered, 1 died.) The complications were

Nonpurulent pleural effusion	1
Pregnancy (aborted 4th day)	1

The figure 4.9% is very far below our ordinary result. It deserves some investigation in order to clear our Camphor treatment of the suspicion of having been a detriment rather than a help. This comparison may be based upon

1. The smaller number in the non-camphor series which would probably show a higher mortality had more cases been in the group.

2. Sex: Had no bearing; the death rate of women was higher in both series than the total average.

3. Age: In the camphor cases the average was 49 years, in the non-camphor 30 years. This difference of nearly two decades could reasonably be expected to account for a substantial part of the difference in death rate. The pneumonia mortality curve climbs steadily with advancing age:

4. Complications accompanying the pneumonia.

(a), Alcoholic Delirium 7 cases, six got camphor, four died, one had no camphor and got well.

(b), Chronic Nephritis 2 cases, both camphor, both died.

(c), Pulmonary Tuberculosis 1 case, camphor, died.

Our basic rate of 30% mortality includes all cases entering with or having the disease regardless of complications. Taking into account the complicated cases and subtracting these ten we are left with the figure 17% for camphor cases, average age 49 years, and 5% for non-camphor cases average 30 years. The figure 5% is still quite low, but 17% for uncomplicated lobar pneumonia is an average, not at all an exceptional rate. I feel it justifiable to conclude that the camphor injections at least had no harmful effect upon the disease. Had there been any very great reaction to the camphor we should expect a superiority in results among those patients who received more than the average dose of 210 grains over those who got less. Classified according to dosage it was found that of those who received more than 210 grains 31% died and of those who received less 26% died, a trifling difference. It seems to us therefore that camphor has shown no effect good or bad upon the circulation or upon the disease itself.

Local complications from use of injections: Two patients did not absorb the oil. The injection remained unchanged for several days. Upon incision clear oil with a camphor odor was evacuated. There was one abdominal wall abscess.

Broncho-pneumonia cases admitted during this time numbered 22. Three who showed many pneumococci in the sputum got camphor. All died. The death rate of this entire group broncho-pneumonia was 41%.

Complications:

1. Alcoholic delirium	2	2 died
2. Morphinism	1	1 died
3. Erysipelas	2	1 died
4. Lung abscess	1	1 died

Untreated pneumonia: There were 12 who entered the hospital within 24 hours of the termination of the disease. None of these had had any adequate treatment and may be classified as untreated. Of these 58% died.

Complications:

Hemiplegia ..... 1 died

Conclusions.

1. Oily solutions of camphor injected hypodermatically had no demonstrable effect upon the circulation of patients with pneumonia.

2. Camphor had no demonstrable specific effect upon the course of the disease.

3. The mortality from lobar pneumonia was 21%. Broncho-pneumonia 41%; untreated pneumonia 58%.

Capital National Bank Building.

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FOCAL INFECTIONS AND NERVE REFLEXES AS RELATED TO THE EYE.*

By CLARENCE E. IDE, M. D., San Diego.

My reason for selecting this subject is that in the course of my work I spend considerable valuable time arguing with dentists and fellow physicians in the effort to convince them that pathological conditions in the eye many times have their real, original cause, or source, in diseased areas in the teeth especially, or the tonsils, sinuses, ears, parotid glands, or just as surely in foci of infection in other parts of the body, as the gall bladder, appendix, urethra, prostate, stomach, intestines, or elsewhere. In my experience the cases due to irritative reflexes from the teeth, over the fifth nerve, or toxins from foci of infection in the dental alveoli, have far outnumbered those due to reflexes or toxins from other organs. I will go further and claim that the percentage of irritative reflex and toxic conditions, as compared to all pathological conditions occuring in the eye, is greater than that of direct infection by pathological organisms floating in the blood stream or metastasis.

The nerve reflexes interfere with trophic function. Toxins are brought to delicate tissues which are damaged thereby and become the seat of a lesion. Sometimes both act together, the reflex irritation proving to be the predisposing cause and the toxins the exciting cause. It is a case of team work between a predisposing irritation, lowering nutrition, and an exciting poisoning of the tissues involved.

The type of condition set up in the eye as the result of products of bacterial action floating in the blood is described as toxic, and manifests itself as a plastic condition. I f the anterior segment of the globe is involved a plastic exudate is evident in the anterior chamber. If the contents of the anterior chamber are aspirated for the purpose of making a culture, the track of the needle is soon the seat of a white plastic exudate. How many cases in which a plastic exudate occluded the pupil after a cataract operation presented such condition, not because the operator did not employ an aseptic technic, but because at that time the habit of investigating the teeth and general system carefully before such operations was not in vogue.

These conditions do not result in destruction of the globe, unless there is superadded direct infection by pathological organisms, but do result in loss of vision in a deplorable number of cases unless the cause is recognized and removed. I have failed to develop cultures in these cases when the exudate was aspirated and transferred to culture tubes of blood serum. Cases could be detailed in which the word of the patient's dentist was taken to the effect that the teeth were in normal condition in which a plastic exudate formed in the anterior chamber after a needling, in which radiographic films disclosed areas of disease in the alveolar sockets of one or more teeth. In other occasional cases it is the tonsils or sinuses or other focus. This simply means that when an operation

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